TMDL: Frank and Poet Drain- Wayne County, Michigan 2007

Effective Date:

Decision Document for Approval of
The Frank and Poet Drain TMDL Report

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable TMDLs. Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term "should" below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable. These TMDL review guidelines are not themselves regulations. They are an attempt to summarize and provide guidance regarding currently effective statutory and regulatory requirements relating to TMDLs. Any differences between these guidelines and EPA's TMDL regulations should be resolved in favor of the regulations themselves.

61308.**Identification of Water body, Pollutant of Concern, Pollutant Sources, and Priority Ranking**

The TMDL submittal should identify the water body as it appears on the State's/Tribe's 303(d) list. The water body should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the water body and specify the link between the pollutant of concern and the water quality standard (see section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the National Pollutant Discharge Elimination System (NPDES) permits within the water body. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA's review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

(1) the spatial extent of the watershed in which the impaired water body is located;
(2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
(3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
(4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and
(5) an explanation and analytical basis for expressing the TMDL through *surrogate*

measures, if applicable. *Surrogate measures* are parameters such as percent fines and turbidity for sediment impairments; chlorophyl *a* and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:

Location/Description/Spatial Extent:

The Frank and Poet Drain watershed is comprised of the Frank and Poet Drain and its tributaries, including Sutliff Kenope Drain and No. 1 Drain (Figure 1 of the Frank and Poet Drain TMDL report). The Frank and Poet Drain watershed is one of three subwatersheds that make up the Combined Downriver watershed, located within Wayne County in southeast Michigan (Figure 2 of the Frank and Poet Drain TMDL report). The three subwatersheds that comprise the Combined Downriver watershed are the Frank and Poet Drain, Blakely Drain, and Detroit River South. The watershed drains an area of approximately 85.9 square miles in a relatively urbanized region, including a portion of the Detroit Metropolitan Airport in the headwater region of the Frank and Poet Drain. The Combined Downriver watershed borders the Ecorse Creek watershed to the north, the Lower Huron watershed to the south and west, and the Detroit River to the east.

The Frank and Poet Drain watershed drains approximately 27 square miles and flows through both the Southern Michigan - Northern Indiana Till Plain, and Huron - Erie Lake Plain ecoregions in southeast Michigan. Soils in the watershed are generally poorly drained and are moderately fine to fine textured with the headwaters being moderately fine to course in texture. Clay and silt dominated soils such as those found in the watershed exhibit low permeability and percolation rates, which causes increases in run-off and total suspended solids (TSS) loads.

Problem Identification/Pollutant of Concern:

The TMDL reach for Frank and Poet Drain appears on the Section 303(d) list as:

Frank and Poet Drain WBID#: 061301K
County: Wayne Size: 10 M
Location: Detroit River confluence u/s, including all tributaries. Vicinity of Gibraltar.
NHD Reach Code: 04090004000720
Problem Summary: Macroinvertebrate community rated poor. TMDL YEAR(s): 2007

The Frank and Poet Drain was placed on the Section 303(d) list due to poor macroinvertebrate communities throughout the watershed. Monitoring by MDEQ in 2006 found poor macroinvertebrate communities at three of the five stations that were monitored in the TMDL reach.

Land Use:

The land use is described in the Source Assessment Section of the Frank and Poet Drain TMDL

report and Table 3 of the Frank and Poet Drain TMLD report. TMDL reach is in Wayne County, which is largely urbanized. It is approximately 60 percent urban/commercial /industrial; 14 percent forest /rural open; 13 percent water/wetlands; and 3 percent agricultural.

Source Identification:

The types of urban and suburban development found in the Frank and Poet Drain watershed have dramatic effects on surface waters in terms of altered runoff patterns, increased flashiness/changed hydrologic response curve, increased suspended solid loading, and shifts in temperature characteristics among other effects. The loss of adequately vegetated riparian zone throughout the watershed combined with substantial land coverage by surfaces impervious to precipitation (roads, parking lots, roof tops) and a curb, gutter, and storm drain system combine to produce rapid runoff rates. MDEQ determined that this rapid movement of water directly to the stream channel results in unstable and flashy flow conditions, stream bank erosion, and sedimentation of instream habitats by new TSS loadings and resuspension of sediments previously deposited in the system. The sediment and water volume additions to the Frank and Poet Drain watershed result from residential, industrial, and agricultural lands. Altered hydrology, or more specifically increased flashiness due to increased runoff rates and volume, has been identified as the cause for the lack of stable in-stream habitat, increased instream erosion, channel aggradation, and heavy siltation of stable in-stream habitats.

MDEQ believes that by reducing TSS loads in the Frank and Poet Drain watershed, along with the decrease in corresponding flow volume and rate, should increase macroinvertebrate community diversity and abundance, thus providing a tangible target towards meeting WQS.

Priority Ranking:

Michigan does not include separate priority rankings for its waters. However, it prioritizes waters based on its five-year rotating watershed assessment approach.

Future Growth:

As stated in the Source Assessment Section of the Frank and Poet Drain TMDL report, from 2000 to 2006, the population in the southeast Michigan seven county region increased by 1.4 percent; however, the population in Wayne County decreased by 3.6 percent. From 2005 to 2016, the population in southeast Michigan is expected to decrease by 67,500, below 2005 levels. From 2016 to 2035, the population is expected to increase 3.4 percent above 2005 levels. The Southeast Michigan Council of Governments predicts that the population within the Ecorse Creek watershed (Frank and Poet Drain is a sub watershed of the Ecorse Creek Watershed) is expected to decrease by 8.5 percent from 2000 to 2030. Future urban and suburban development in the Frank and Poet Drain watershed will have dramatic effect on surface waters in terms of altered runoff patterns, increased flashiness/changed hydrologic response curve, increased suspended solid loading, and shifts in temperature characteristics among other effects.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this first

element.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the water body, the applicable numeric or narrative water quality criterion, and the antidegradation policy. (40 C.F.R. §130.7(c)(1)).
EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

Comment:

Designated Use of Waterbody:

The impaired designated use addressed by this TMDL for the Frank and Poet Drain is related to the poor macroinvertebrate communities found in the watershed. The designated use rule (R 323.1100 of the Part 4 rules, WQS, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, [NREPA]) requires the protection of, among other uses and specific to this TMDL, indigenous aquatic life (R 323.1100[1][d] and [e]).

Water Quality Standard/Target:

The primary numeric target is based on the Procedure 51 biological community assessment protocol. Macroinvertebrate communities can rate poor, acceptable, or excellent based on the total score of nine individual metrics. Individual metrics (such as total number of taxa, percent mayfly composition, percent surface dependant taxa, etc.) are scored -1, 0, or +1 based on how they compare to excellent sites in each of Michigan's ecoregions. Macroinvertebrate communities at a site can therefore have a total score that ranges from -9 to +9. Scores of +5 or higher are classified as excellent, and scores of -5 or lower are classified as poor. Acceptable sites, those streams meeting WQS, are scored between excellent and poor, in the range of +4 to -4. This TMDL target is the reestablishment of macroinvertebrate communities that, when monitored using Procedure 51, result in a consistent acceptable or excellent rating.

A secondary numeric target based on Total Suspended Solids (TSS) concentration will be used to

assess improvements in the Frank and Poet Drain watershed. This secondary target is a mean annual in-stream TSS concentration of 80 milligrams per liter (mg/L) for wet weather events. The mean annual target concentration of 80 mg/L TSS is based on a review of existing conditions and published literature on the effects of TSS to aquatic life. MDEQ believes that a chemically inert suspended solids concentration of 100 mg/L appears to separate those streams with a fish population from those without. The published literatures provided the following water quality goals for suspended solids for the protection of fish communities:

Optimum	=	$\leq$ 25 mg/L
Good to Moderate	=	> 25 to 80 mg/L
Less than Moderate	=	> 80 to 400 mg/L
Poor	=	> 400 mg/L

Because the purpose of this TMDL is to identify possible steps to restore the biological community to an acceptable condition, thereby working toward attaining WQS, a value of 80 mg/L as a mean annual target for wet weather events was chosen for the Frank and Poet Drain watershed as a secondary target. Achievement of the biological target will override this secondary target; however, if the TSS target is met, but the biological target not achieved, then the TSS target may be reevaluated. The secondary numeric target is intended to help guide proper control over excessive suspended solids loads from runoff, as well as excessive runoff discharge rates and volumes that cause increased stream flow instability, stream bank erosion, and increased suspended solids concentrations. The secondary numeric target is intended to link a measurable in-stream parameter to the hydrologic changes in the watershed and the resultant habitat changes that are heavily impacting the biological communities in this system.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this second element.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a water body for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. §130.2(f)).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. §130.2(i)). If the TMDL is expressed in terms other than a daily load, e.g., an annual load, the submittal should explain why it is appropriate to express the TMDL in the unit of measurement chosen. The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for steam flow, loading, and water

quality parameters as part of the analysis of loading capacity. (40 C.F.R. §130.7(c)(1)). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

Comment:

MDEQ believes that the observed TSS standard nonattainment in ~~East Branch Coon Cree~~Frank and Poet Drain watershed can be attributed to a number of factors. These factors were discussed in Source Assessment section of the Frank and Poet Drain TMDL report. Possible sources of TSS include storm water runoff, natural background conditions (i.e., lake plain system flowing through sedimentary fine particle soils), in-stream sources like erosion and finally permitted discharges identified in Appendix a of the Frank and Poet Drain TMDL report.

The Loading Capacity (LC) is the maximum loading that can be assimilated by the receiving water while still achieving WQS. The overall LC ~~loading capacity~~ is subsequently allocated into WLAs for point sources, LAs for non Point Source (NPS)~~nonpoint sources~~, and the MOS. ~~Load allocations (~~MDEQ believes that the TSS reduction is the best overall strategy to improve macroinvertebrate community in the Frank and Poet Drain Watershed. ~~The~~ The ~~TMDL~~ LC for TSS ~~is~~ is calculated as the sum of the WLA and LA~~Annual TSS Load Numeric Target (807,000 pounds/year) divided by 365 days/year~~, and is equal to 20,786~~2,211~~ pounds/day, based on the year-~~-~~round standard for the indigenous aquatic life and wildlife as presented in Table 3 of the Frank and Poet Drain TMDL report and below Table 1.

~~**ALLOCATIONS**~~

~~TMDLs are comprised of the sum of individual WLAs for point sources and LAs for NPS~~nonpoint sources and natural background levels. In addition, the TMDL must include a margin of safety (MOS), either implicitly or explicitly, that accounts for uncertainty in the relation between pollutant loads and the quality of the receiving water body. Conceptually, this definition is denoted by the equation:

~~***TMDL = ∑WLAs + ∑LAs + MOS***~~

13.~~The term TMDL represents the maximum loading that can be assimilated by the receiving water while still achieving WQS. The overall loading capacity is subsequently allocated into the TMDL components of WLAs for point sources, LAs for nonpoint sources, and the MOS.~~

Method for cause-and-effect relationship:

EPA's Simple Method model was used to estimate the annual TSS loads in the Frank and Poet Drain watershed. Simple Method is an empirical approach for estimating pollutant loadings, using the following equation:

$L_P = \Sigma_u(P*P_J*R_{VU}*C_U*A_U*2.7/12)$
Where:

L_P = Pollutant load, lbs.
u = Land use type
P = Precipitation, inches/year
P_J = Ratio of storms producing runoff (default = 0.9)
R_{VU} = Runoff Coefficient for land use type u, $inches_{run}/inches_{rain}$, = 0.05 + (0.9 *$I_U$)
I_U = Percent Imperviousness
C_U = Event Mean Concentration for land use type u, mg/L
A_U = Area of land use type u, acres

A mean annual rainfall estimate of 33 inches was obtained from the Detroit Metro Wayne County Airport 1962-1991. TSS event mean concentrations for each land use category were developed for the Rouge River watershed. The soil types and climate in the Frank and Poet Drain watershed are similar to the Rouge River watershed; therefore, the TSS event mean concentrations developed for the Rouge River watershed were used for the Frank and Poet Drain watershed. The estimated area (acres) for each land use category was based on year 2000 land use imagery. The pollutant load for each land use type was divided by 365 days to obtain a pollutant load per day.
Analysis:

A weakness of the TMDL analysis is that the estimates of loads of TSS were based on non-site-specific data, and represent a best approximation. However, EPA believes the weakness discussed in this TMDL is outweighed by the overall 16% reduction of TSS loads in this watershed. In the event that TSS levels do not meet WQS in response to implementation efforts described in the Frank and Poet Drain TMDL report, the TMDL strategy may be amended as new information on the watershed is developed, to better account for contributing sources of the impairment and to determine where reductions in the Frank and Poet Drain watershed are most appropriate.

Critical Condition:

The critical condition is ~~defined as~~ the set of environmental conditions (e.g., flow) used in developing the TMDL that result in attaining WQS and has an acceptably low frequency of ~~occurance~~occurrence. The habitat degradation and poor biological communities in the Frank and Poet Drain watershed are linked to the excessive flows attributable to wet weather conditions.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this third element.

4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future non-point sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g). Where possible, load allocations should be described separately for natural background and non-point sources.

Comments:

The LA component (313 lbs/day) of the TMDL defines the fraction of the LC for TSS from

nonpoint sources including the following land use categories: agricultural, forest/rural open, and water/wetland (Table 3 of the Frank and Poet Drain TMDL report and below Table 1). An estimated current annual TSS load of 347 lbs/day is attributed to these categories in the Frank and Poet Drain watershed. No reductions are specified for the forest/rural open and water/wetland land uses because the modeled runoff concentrations of TSS are typically less than the 80 mg/L numeric target. The only targeted source load reduction is from the agricultural land use, which has an estimated average runoff TSS concentration of 145 mg/L. A 45 percent reduction (from 75 to 41 lbs/day) from agricultural areas in the watershed is recommended resulting in a LA TSS target of 313 lbs/day, based on achieving a mean annual runoff concentration of 80 mg/L TSS during wet weather events.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this fourth element.

5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. §130.2(h), 40 C.F.R. §130.2(i)). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. These individual WLAs may be adjusted during the NPDES permitting process. If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL. If the WLAs are not adjusted, effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through reductions in the remaining individual WLAs and that localized impairments will not result. All permittees should be notified of any deviations from the initial individual WLAs contained in the TMDL. EPA does not require the establishment of a new TMDL to reflect these revised allocations as long as the total WLA, as expressed in the TMDL, remains the same or decreases, and there is no reallocation between the total WLA and the total LA.

Comments:

WLA for Frank and Poet Drain is estimated to be 20,473 lbs/day. Existing NPDES and MDOT permitted loads (12,553 lbs/day) and all commercial/industrial/urban/residential loads (11,878 lbs/day) are 24,431 lbs/day (Tables 3 and 5 of the Frank and Poet Drain TMDL report) and Table 1 and 2 below. Detroit Cold Rolling Co. and DSC Ltd-Gibraltar have limit or monitoring requirements for TSS in their permits. Detroit Cold Rolling Co. has a monthly maximum loading limit of 1,700 lbs/day, which was used as the waste load allocation for this facility. DSC Ltd-Gibraltar has seasonal limits for TSS; therefore, the TSS load was calculated by determining the

TSS load per season (from the limit and number of days pertaining to the limit), summing the loads, and dividing by 365 days. Countywide LF-Gibraltar and Detroit Metro Wayne Co. Airport do not have limits or monitoring requirements for TSS in their permits. Therefore, a concentration of 30 mg/L was assumed to be worst-case-scenario based on the limits imposed on other facilities in the watershed. Countywide LF-Gibraltar discharges seasonally; therefore, a TSS load was estimated from the facility's design flow and the assumed 30 mg/L TSS concentration, multiplying the number of days the facility discharges, and then dividing by 365 days. A TSS load for Detroit Metro Wayne Co. Airport was estimated from the average flow of the facility (obtained from discharge monitoring reports) and the assumed discharge concentration of 30 mg/L TSS.

Table1. Land use categories, estimated current TSS loads (lbs/day), and target TSS loads in the Frank and Poet Drain Watershed, Wayne County, Michigan.

	Land Use/Source	Acres	% Land Use	Expected TSS Concentration (mg/L)*	Expected TSS Load (lbs/day)	% Total Load	Target TSS Concentration (mg/L)	Target TSS Load (lbs/day)	% Reduction Needed
WLA	Commercial**	1,850	11	77	1,451	6	80	1,451	0
	Industrial**	3,924	24	**149**	**7,892**	32	**80**	**4,237**	**46**
	Residential Hi**	435	3	**97**	**395**	2	**80**	**325**	**18**
	Residential Med**	3,933	24	70	1,985	8	80	1,985	0
	Urban Open**	1,112	7	51	155	1	80	155	0
	NPDES Individual***								
	MDOT	395	2	**141**	**539**	2	**80**	**306**	**43**
	All Others	-	-	-	12,014	48	-	12,014	0
	WLA Total	11,254	68	-	**24,431**	**99**	-	**20,473**	**16**
	Agricultural	415	3	**145**	**75**	0	**80**	**41**	**45**
LA	Forest/Rural Open	2,322	14	51	148	1	80	148	0
	Water/Wetland	2,213	13	6	124	1	80	124	0
	LA Total	4,950	30	**-**	**347**	**2**	**-**	**313**	**10**
	Overall Total	**16,599**	100	-	**24,778**	**101**	**-**	**20,786**	**16**
	*Rouge River National Wet Weather Demonstration Project 2006								
	**These land use categories are addressed under NPDES general, industrial, and municipal stormwater permits or Permit by Rule.								
	***Refer to Table 5 of the Frank and Poet Drain TMDL report for NPDI also table 2 below.								

Table 2. TSS Loads for Individually Permitted NPDES and MDOT Facilities Discharging to the Frank and Poet Drain Watershed included in the WLA.

Permittee	Permit Number	TSS Load (lbs/day)
Detroit Cold Rolling Co (purchased by Steel Rolling Holdings)	MI0056243	1,700
DSC Ltd-Gibraltar	MI0004227	155
Detroit Metro Wayne Co. Airport	MI0036846	
Outfall 004A		4,318
Outfall 006A		5,662
Countywide LF Gibraltar	MI0056383	179
Total TSS Load for Individually Permitted NPDES Facilities		12,014
Michigan Department of Transportation (MDOT)	MI0057364	539
Total expected load from NPDES and MDOT permits		12,553

All commercial, industrial, residential, and urban open land use categories are covered under NPDES general, industrial, and municipal storm water permits or Permits by Rule. Therefore, based on the acres of land use categories and TSS loading factors derived from the RRNWWDP a current total load estimate of approximately 11,878 lbs/day is attributable to these sources.

No reductions are specified for the commercial, medium density residential, and urban open land uses because the modeled runoff concentrations of TSS are typically less than the 80 mg/L numeric target. The targeted source load reductions are from the industrial and high density residential land uses and the Michigan Department of Transportation (MDOT) individual permit (Table 3 of the Frank and Poet Drain TMDL report), which have estimated average runoff TSS concentrations of 149, 97, and 141 mg/L, respectively. To achieve the goal of 80 mg/L as an annual average during wet weather runoff events from all point sources, a reduction of 46 percent (from 7,892 to 4,237 lbs/day) from industry, 18 percent (from 395 to 325 lbs/day) from high density residential, and 43 percent (539 to 306 lbs/day) from MDOT will result in a projected WLA target load of 20,473 lbs/day of TSS, an overall 16 percent reduction in loads from regulated point sources (Table 3 of the Frank and Poet Drain TMDL report).

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this fifth element.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)). EPA's 1991 TMDL Guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

Comments:

The margin of safety used in the Frank and Poet Drain TMDL is implicit because the TMDL is based on the quality of the biological community itself and its overall integrity. By using a primary target of the biota score rather than relying exclusively on a chemical numeric criteria (such as TSS), MDEQ believes that the waterbody will only be acknowledged to be meeting the WQSs when the fish community is healthy, rather than the waterbody just meeting a numeric target only. By using this approach, MDEQ believes that those waters that are truly impaired are listed and will continue to be addressed, even if they are meeting a chemical numeric criteria (i.e., TSS). This reduces the number of "false positives," or a situation where a water meets all chemical criteria yet the fish community, which MDEQ believes is the truest measure of a stream's health, is impaired. In addition, this also ensures that the water will be considered impaired and implementation efforts will continue until the fish community is recovered, thus reducing uncertainty.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this sixth element.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal

variations. (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).

Comments:

MDEQ addressed seasonality in Frank and Poet Drain TMDL through specified sampling periods for the macroinvertebrate community. To minimize temporal variability in the biological community, MDEQ will sample between June and September during stable, low flow conditions, following Procedure 51. MDEQ believes that the support of the designated uses using the biological indicators further addresses seasonality by their presence in the aquatic environment over their entire (or large portions of) life cycles, thereby being reflective of seasonal shifts in the condition of the water body.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this seventh element.

8. Reasonable Assurances

When a TMDL is developed for waters impaired by point sources only, the issuance of a National Pollutant Discharge Elimination System (NPDES) permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R. 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with "the assumptions and requirements of any available wasteload allocation" in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.

EPA's August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

Comments:

MDEQ identified numerous management strategies and programs that will address the impairment in the Frank and Poet Drain Watershed. There are currently 46 active or pending Notices of Coverage (NOCs) under Permit by Rule for construction activities of 5 acres or more, issued by the MDEQ, in the Frank and Poet Drain watershed. Applicants are required to submit an NOC to obtain coverage under Permit by Rule. Prior to submitting the NOC, a Soil Erosion and Sedimentation Control (SESC) permit must be obtained.

Regulated construction activities that disturb one to five acres are not required to submit an NOC.

These sites have automatic coverage under Permit by Rule if they have obtained coverage under the SESC program, in accordance with Part 91, SESC, of the NREPA. The land owner or easement holder must comply with the requirements of the Permit by Rule. Therefore, the owner or easement holder is required to provide for weekly inspections of the SESC practices identified in their SESC permit. In addition, the site should be inspected after major rain events that may cause a discharge from the site. These inspections are conducted by, and recorded in, inspection logs by a storm water operator who is trained and certified by the MDEQ.

With regard to the MDOT statewide MS4 permit (MI0057364), the permit requires that the MDOT shall develop, implement, and enforce storm water management programs designed to reduce the discharge of pollutants from the MDOT drainage systems in the state of Michigan to the Maximum Extent Practicable, to protect the designated uses of the waters of the state, to protect water quality, and to satisfy the appropriate state and federal water quality requirements. If a water body has a TMDL established by the MDEQ for a particular pollutant, the Maximum Extent Practicable includes the development, implementation, and enforcement of storm water controls designed to meet the responsibilities established by the TMDL. Storm water management programs require implementation of BMPs to comply with the minimum measures identified in the permit and any TMDLs if applicable.

Federal regulations require certain industries to apply for an NPDES permit if storm water associated with industrial activity at the facility discharges into a separate storm sewer system or directly into surface water. There are 22 facilities with storm water discharge authorization within the Frank and Poet Drain watershed. Prior to obtaining permit coverage, applicants must certify that they do not have any unauthorized discharges. MDEQ staffs conduct inspections on a percentage of the permitted/regulated industrial facilities annually. Inspections ensure that facilities comply with the regulations and result in a further reduction in unauthorized discharges and illicit connections. More illicit discharges will be eliminated as additional facilities obtain industrial storm water permits. In addition, Michigan's storm water permit authorization requires facilities to obtain a certified operator to have supervision and control over the control structures at the facility, eliminate any unauthorized non-storm water discharges, and develop and implement a storm water pollution prevention plan for their facility, including structural and nonstructural control measures.

In order to comply with their MS4 permits (MIG619000), the municipalities in the Frank and Poet Drain watershed (as listed in Appendix A of the Frank and Poet Drain TMDL report), in conjunction with other permittees in the Combined Downriver watershed, are required to submit a joint Public Participation Process and a joint Watershed Management Plan. The permittees are also required to submit a Storm Water Pollution Prevention Initiative and implementation schedule.
In 2003, the Combined Downriver Inter-Municipality Committee (CDWIC) was formed to facilitate the implementation of the requirements of the state of Michigan general permit (MIG619000) for Phase II MS4s subject to watershed plan requirements. Some of these requirements include: public education and outreach, illicit discharge detection and elimination, construction site runoff control, and pollution prevention and good housekeeping. Thirteen communities and entities developed the watershed management plan (Combined Downriver Watershed Management Plan) as required by the general permit. The final revised watershed management plan was submitted to the MDEQ on May 12, 2006.

MDEQ also identified numerous other programs and organizations that will help address the impairment in Reasonable Assurance Activities section of the Frank and Poet Drain TMDL report.

EPA finds that the TMDL document submitted by MDEQ adequately addresses this eighth element.

9. Monitoring Plan to Track TMDL Effectiveness

EPA's 1991 document, *Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

Comments:

As discussed in the Monitoring Section of the Frank and Poet Drain TMDL report, this ~~TMDL's~~TMDL's approach requires that future monitoring be conducted to assess whether activities implemented under the TMDL result in water quality improvements. Monitoring will be conducted by the MDEQ to assess progress toward meeting this TMDL target following implementation of applicable BMPs and control measures. Follow-up biological assessments will be conducted from June through September and under stable, low flow conditions, following Procedure 51. Additionally, the Frank and Poet Drain watershed will continue to be monitored on a five-year rotating basis, regardless of TMDL activity, and the information from those surveys will be available to assess the condition of the biological communities as well.

In-stream monitoring of TSS concentrations may also be conducted to determine whether the secondary TSS target is met. For assessing progress in reducing TSS loading to the Frank and Poet Drain watershed, MDEQ will conduct seasonal event monitoring and if necessary, after the control measures are in place to define and characterize TSS loading and the associated hydrologic pattern that influences the biota in the Frank and Poet Drain watershed.

EPA finds that the TMDL document submitted by MDEQ adequately addresses this ninth element.

10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not

required to and does not approve TMDL implementation plans.

Comment:

The Frank and Poet Drain TMDL report does not contain a formal implementation plan. EPA is not required to, and therefore does not, approve TMDL implementation plans. However, MDEQ did identify some implementation activities that will work toward meeting the WQS for TSS non-attainment. As discussed under the Reasonable Assurance Activities section (item #8 above), various plans have been implemented and are on-going in the Frank and Poet Drain watershed.

EPA finds that the TMDL document submitted by MDEQ adequately addresses this tenth element.

11. Public Participation

EPA policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 C.F.R. §130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval should describe the State's/Tribe's public participation process, including a summary of significant comments and the State's/Tribe's responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. §130.7(d)(2)).

Provision of inadequate public participation may be a basis for disapproving a TMDL. If EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

Comments:

The availability of the draft Frank and Poet Drain TMDL report was announced on the MDEQ Calendar on June 25 and July 23, 2007. The draft Frank and Poet Drain TMDL report was public noticed from June 25, 2007, to July 25, 2007. A stakeholder meeting was held on July 16, 2007, at the Taylor City Hall in Taylor, Michigan. Stakeholders were determined by identifying municipalities (i.e., counties, townships, and cities) and citizen groups in the TMDL watershed. Copies of the draft Frank and Poet Drain TMDL report were available upon request, posted on MDEQ's website and were available at the public meeting. Comments were received from Mr. Noel Mullet and EPA and were adequately addressed by MDEQ.

EPA finds that the TMDL document submitted by MDEQ satisfies all requirements of this eleventh element.

12. Submittal Letter

A submittal letter should be included with the TMDL submittal, and should specify whether the TMDL is being submitted for a *technical review* or *final review and approval*. Each final

TMDL submitted to EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State's/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the water body, and the pollutant(s) of concern.

Comment:

The submittal letter was dated August 27, 2007, from Ms. Diana Klemans, Chief, Surface Water Assessment Section, Water Bureau, MDEQ to Ms. Cheryl Newton, Acting Director, Water Division, Region 5 EPA. The letter stated clearly that the final Macroinvertebrate TMDL for Frank and Poet Drain is submitted for your review and approval under Section 303(d) of the CWA. The letter also contains the name of the watershed as it appears on the Michigan's Section 303(d) list, and the pollutant of concern, and period that this TMDL Study was public noticed from June 25, 2007 through July 25, 2007.

EPA finds that the TMDL documents submitted by MDEQ satisfy all requirements of this twelfth element.

14.Conclusion

After a full and complete review, EPA finds that the TMDL for the Frank and Poet Drain, WBID# 061301K, satisfies all of the elements of an approvable TMDL. This approval document is for one water body segment impaired by TSS for a total of one TMDL addressing one impairment from the 2006 Michigan Section 303(d) list. EPA's approval of this document does not extend to those waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove TMDLs for those waters at this time. EPA or eligible Indian Tribes as appropriate will retain responsibilities under CWA Section 303(d) for those waters.

Water body	*ID*	*NHD Reach Code*	*Pollutant*	*Impairments*
Frank and Poet Drain	*WBID#061301K*	*04090004000720*	*TSS*	*Macroinvertebrate*